

## CLAIMS

What is claimed is:

- 1 1. A method for servicing requests received by a server in a multiple-user environment,  
2 the method comprising the steps of:  
3 establishing a first session between said server and a first user;  
4 establishing a second session between said server and a second user;  
5 responding to requests that are received by said server in said first session by  
6 executing virtual machine code using a first virtual machine instance; and  
7 responding to requests that are received by said server in said second session by  
8 executing virtual machine code using a second virtual machine instance;  
9 wherein said first virtual machine instance and said second virtual machine instance  
10 are distinct instances of a same type of virtual machine;  
11 wherein said first virtual machine instance exists within said server concurrently with  
12 said second virtual machine instance; and  
13 wherein said first virtual machine instance and said second virtual machine instance  
14 are two of a plurality of virtual machine instances, associated with said server,  
15 that share access to data stored in a shared state area allocated in volatile  
16 memory associated with said server.

- 1 2. The method of Claim 1 further comprising the step of sharing, between said first  
2 virtual machine instance and said second virtual machine instance, a set of one or  
3 more resources within said shared state area.
- 1 3. The method of Claim 2 wherein the step of sharing a set of one or more resources  
2 includes sharing data associated with an object class.

1    4. The method of Claim 1 wherein said plurality of virtual machine instances share read-  
2        only access to said data stored in said shared state area allocated in volatile memory  
3        within said server.

1    5. The method of Claim 1 wherein:  
2        said shared state area stores data associated with an object class; and  
3        said first virtual machine instance stores, in session-specific memory associated with  
4                said first virtual machine instance, a first value for a static variable associated  
5                with said object class; and  
6        said second virtual machine instance stores, in session-specific memory associated  
7                with said second virtual machine instance, a second value for said static  
8                variable associated with said object class.

1    6. The method of Claim 1 further comprising the steps of:  
2        responding to a call associated with a particular session with said server by allocating  
3                a call memory for the particular virtual machine instance associated with said  
4                particular session; and  
5        discarding said call memory upon termination of said call.

1    7. The method of Claim 1 further comprising the step of:  
2        responding to a call associated with a particular session with said server by  
3                scheduling, for execution in a system thread, the particular virtual machine  
4                instance associated with said particular session.

1    8. The method of Claim 1 further comprising the steps of:  
2        spawning the first virtual machine instance by instantiating a data structure; and

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changing the state of said first virtual machine instance during execution of said virtual machine code by manipulating data within said data structure.

- 1    9. A computer-readable medium carrying instructions for servicing requests received by
- 2        a server in a multiple-user environment, the instruction comprising instructions for
- 3        performing the steps of:
- 4            establishing a first session between said server and a first user;
- 5            establishing a second session between said server and a second user;
- 6            responding to requests that are received by said server in said first session by
- 7                executing virtual machine code using a first virtual machine instance; and
- 8            responding to requests that are received by said server in said second session by
- 9                executing virtual machine code using a second virtual machine instance;
- 10          wherein said first virtual machine instance and said second virtual machine instance
- 11                are distinct instances of a same type of virtual machine;
- 12          wherein said first virtual machine instance exists within said server concurrently with
- 13                said second virtual machine instance; and
- 14          wherein said first virtual machine instance and said second virtual machine instance
- 15                are two of a plurality of virtual machine instances, associated with said server,
- 16                that share access to data stored in a shared state area allocated in volatile
- 17                memory associated with said server.

- 1    10. The computer-readable medium of Claim 9 further comprising instructions for
- 2        performing the step of sharing, between said first virtual machine instance and said
- 3        second virtual machine instance, a set of one or more resources within said shared
- 4        state area.

1    11. The computer-readable medium of Claim 10 wherein the step of sharing a set of one  
2    or more resources includes sharing data associated with an object class.

1    12. The computer-readable medium of Claim 9 wherein said plurality of virtual machine  
2    instances share read-only access to said data stored in said shared state area allocated  
3    in volatile memory within said server.

1    13. The computer-readable medium of Claim 9 wherein:  
2         said shared state area stores data associated with an object class; and  
3         said first virtual machine instance stores, in session-specific memory associated with  
4                 said first virtual machine instance, a first value for a static variable associated  
5                 with said object class; and  
6         said second virtual machine instance stores, in session-specific memory associated  
7                 with said second virtual machine instance, a second value for said static  
8                 variable associated with said object class.

1    14. The computer-readable medium of Claim 9 further comprising instructions for  
2         performing the steps of:  
3         responding to a call associated with a particular session with said server by allocating  
4                 a call memory for the particular virtual machine instance associated with said  
5                 particular session; and  
6         discarding said call memory upon termination of said call.

1    15. The computer-readable medium of Claim 9 further comprising instructions for  
2         performing the step of:

3 responding to a call associated with a particular session with said server by  
4 scheduling, for execution in a system thread, the particular virtual machine  
5 instance associated with said particular session.

1       16. The computer-readable medium of Claim 9 further comprising instructions for  
2 performing the steps of:  
3 spawning the first virtual machine instance by instantiating a data structure; and  
4 changing the state of said first virtual machine instance during execution of said  
5 virtual machine code by manipulating data within said data structure.

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